REMARKS

Applicant appreciates the thorough examination of the present application as evidenced by the Official Action of August 17, 2005 (hereinafter "Office Action"). However, in the following remarks, Applicant will show that all of the pending claims are patentable over the cited references. In addition, Applicant has amended dependent Claim 13 to correct a minor error therein. More particularly, Applicant has amended Claim 13 to recite a "mobile terminal according to Claim 9" in place of a "method according to Claim 9", as independent Claim 9 is directed to a mobile terminal.

Accordingly, Applicant submits that pending Claims 1-16 are patentable over the cited references for at least the reasons discussed below.

The Information Disclosure Statement

The Office Action asserts that Applicant's information disclosure statement filed December 20, 2004, failed to comply with 37 C.F.R. 1.98(a)(3) because an English translation of Japanese Publication JP 2002-118414 cited therein was not included. In response, Applicant submits herewith a Supplemental Information Disclosure Statement (IDS) including an English language computer translation of Japanese Publication JP 2002-118414 (provided by the Japanese Patent Office website www.jpo.go.jp), along with an English translation of the Abstract thereof to satisfy the requirements of 37 C.F.R. 1.98(a)(3). The Supplemental IDS further includes a copy of Japanese Publication JP 2002-118414 for the Examiner's convenience. Applicant further notes that the Examiner has not indicated consideration of the International Search Report and Written Opinion of the International Searching Authority included in Applicant's IDS of December 20, 2004. Accordingly, the Supplemental IDS submitted herewith also includes the International Search Report and Written Opinion of the International Searching Authority. Applicant therefore submits that this Supplemental IDS complies with the requirements of 37 C.F.R. 1.98(a)(3), and as such, consideration of the documents cited therein is respectfully requested.

Independent Claims 1 and 9 Are Patentable Over the Cited References

Claims 1-16 stand rejected under 35 U.S.C. §103(a) as obvious over U.S. Patent 6,456,249 to Johnson et al. (hereinafter "Johnson") in view of U.S. Patent 6,421,016 to Phillips et al. (hereinafter "Phillips") and European Patent Application EP 1030401 to Monma (hereinafter "Monma"). However, Applicant respectfully submits that the combination of these references fails to disclose or suggest many of the recitations of the pending claims. Claim 1, for example, recites:

> 1. A mobile terminal including:
> a printed circuit board having first and second sides and having a reference voltage conductor therein;
> an antenna coupled to the first side of the printed circuit board; and
> a parasitic resonator having first and second couplings to the second side of the printed circuit board so that the printed circuit board is between the antenna and the parasitic resonator, wherein the first coupling to the printed circuit board comprises a first impedance between the parasitic resonator and the reference voltage conductor, and wherein the second coupling to the printed circuit board comprises a second impedance between the resonator and the reference voltage conductor wherein the first and second impedances are different. (*Emphasis added*).

The Office Action concedes that Johnson fails to disclose or suggest an antenna coupled to a first side of a printed circuit board and a parasitic resonator coupled to a second side so that the printed circuit board is between the antenna and the parasitic resonator. As such, the Office Action relies on Phillips and Monma to provide these recitations. *See* Office Action, Page 3.

Applicant submits that, as set forth in the Manual of Patent Examining Procedure (MPEP):

> To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

MPEP, Sec. 2143.

Applicant respectfully submits that the combination of Johnson, Phillips, and Monma fails to teach or suggest at least the recitations of Claim 1 highlighted above. Phillips describes an antenna system including a resonator **104** and an antenna **102** coupled to a printed circuit board **108** by a conductive connection **208**. *See* Phillips,

Fig. 2. As shown in Figures 1 and 2 of Phillips, the antenna **102** is coupled to the conductive connection **208** adjacent the resonator **104** on a same side of the printed circuit board **108**. However, the Office Action notes that, as described in the cited portions of Phillips, "the antenna **102** can be located anywhere on the conductive connection **208** between the first and second conductor **104**, **108**. *See* Phillips, Col. 4, lines 52-58. (*Emphasis added*). The Office Action asserts that such a description "supports locating the antenna on the second side of the PCB." *See* Office Action, Page 3.

Applicant respectfully disagrees. Referring to Figure 2 of Phillips, Applicant respectfully submits that even if the antenna **102** were located at the far leftmost portion of the conductive connection **280**, the printed circuit board **108** would not be located between the resonator **104** and the antenna **102**. In other words, no matter where the antenna **102** is located on the conductive connection **208** of Figure 2, the printed circuit board **108** is not *between* the antenna **102** and the resonator **104**, since the antenna **102** appears to be *above* the printed circuit board **108**. Accordingly, Applicant submits that Phillips does not disclose or suggest an antenna coupled to the first side of the printed circuit board and a parasitic resonator coupled to the second side of the printed circuit board "so that the printed circuit board is between the antenna and the parasitic resonator" as recited by Claim 1.

Nor does Monma appear to provide these recitations. Monma describes a space selective diversity antenna including a whip antenna **202** and a plane antenna **203**. *See* Monma, Fig. 2. However, the cited portions of Monma do not illustrate a printed circuit board inside the housing **201**. *See* Monma, Figs.1-3. As such, Figures 1 to 3 of Monma do not illustrate an orientation of a printed circuit board relative to the whip antenna **202** and the plane antenna **203**. Nor does the Office Action appear to point to specific portions of Monma to provide these teachings. Thus, Monma does not appear to teach or suggest that the whip antenna **202** is coupled to a first side of a printed circuit board, that the plane antenna **203** is coupled to a second side of a printed circuit board, and/or that a printed circuit board is between the whip antenna **202** and the plane antenna **203**. Accordingly, Applicant submits that Monma does not disclose or suggest "an antenna coupled to the first side of the printed circuit board" and "a parasitic resonator having first and second couplings to the second side of the printed circuit board so that the printed circuit board is between the antenna and the parasitic resonator", as recited by Claim 1.

Moreover, Applicant submits that it would not be obvious to combine the teachings of Johnson with those of Phillips and/or Monma. As provided in the MPEP, "[t]he mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990)." MPEP, Sec. 2143. Applicant submits that the teachings of Johnson fails to suggest the desirability of combination with the teachings of Phillips and/or Monma. More specifically, in Figures 1-19, Johnson illustrates *twelve* different embodiments of an antenna assembly. Each of the twelve embodiments includes a parasitic resonator **18** and an antenna **16** on the *same* side of a printed circuit board **22**. *See* Johnson, Figs. 1-19. In other words, none of the twelve embodiments of Johnson discloses or suggests the antenna **16** and the parasitic resonator **18** on *opposite* sides of the printed circuit board **22**, such that the printed circuit board **22** is between the antenna **16** and the parasitic resonator **18**. Accordingly, as Johnson provides twelve separate embodiments having the antenna **16** and the parasitic resonator **18** on the same side of the printed circuit board **22**, Applicant submits that Johnson does not appear to suggest the desirability of moving the antenna to an opposite side of the printed circuit board "so that the printed circuit board is between the antenna and the parasitic resonator", as recited by Claim 1.

In view of the above, Applicant submits that the combination of the cited references to Johnson, Phillips, and Monma fails to disclose or suggest all of the recitations of Claim 1, and that it would not be obvious to combine the cited references. If the Examiner wishes to maintain the rejections based on the cited references to Johnson, Phillips, and/or Monma, Applicant respectfully requests that the Examiner point out specific portions of the cited references that teach the recitations of Claim 1 discussed above.

For at least these reasons, Applicant submits that Claim 1 is patentable over the cited references. Independent Claim 9 similarly recites a printed circuit board between an antenna and a parasitic resonator, and is therefore patentable for at least similar reasons. In addition, dependent Claims 2-8 and 10-16 are patentable at least per the patentability of Claims 1 and 9 from which they respectively depend.

Many of the Dependent Claims Are Separately Patentable

As discussed above, Applicant submits that each of the dependent claims are patentable over the cited references at least per the patentability of independent Claims 1 and 9 from which they respectively depend. In addition, many of the dependent claims are independently patentable. For example, Claim 7 recites that one of the first and second couplings between the parasitic resonator and the printed circuit board is a discrete impedance element "soldered on the printed circuit board".

The Office Action asserts that Phillips teaches discrete tunable components Z1 and Z2 which are attached/soldered to a printed circuit board. *See* Office Action, Page 5. However, Applicant submits that, although Phillips may describe reactive tuning devices Z1 and Z2, nowhere does Phillips appear to disclose or suggest that these devices are soldered to the printed circuit board **108**. Nor does the Office Action appear to rely on Johnson or Monma as disclosing such discrete impedance components.

Accordingly, Applicant submits that the combination of Johnson, Phillips, and Monma fails to disclose or suggest that at least one of the first and second couplings between the parasitic resonator and the printed circuit board is a discrete impedance element "soldered on the printed circuit board", as recited by Claim 7. As such, Applicant submits that Claim 7 is separately patentable over the combination of the cited references. Claim 11 similarly recites discrete impedance elements soldered on the printed circuit board, and is therefore patentable for at least similar reasons.

Conclusion

For at least the reasons discussed above, Applicant submits that the rejections of pending Claims 1-16 are overcome, and that the claims are, therefore, in condition for allowance. Accordingly, Applicant respectfully requests reconsideration of the outstanding rejections and passing the application to issue. Applicant encourages the Examiner to contact the undersigned by telephone to resolve any remaining issues.

Respectfully submitted,

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Betty-Lou Rosser